

# **Express Check Conversion**

## **BACKGROUND OF THE INVENTION**

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### **TECHNICAL FIELD**

The invention relates generally to electronic checks processing. More particularly, the invention relates to a method and apparatus for automatically converting checks to ACH debits.

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### **DESCRIPTION OF THE PRIOR ART**

Due to recent changes in the Automated Clearing House (ACH) by the National Automated Clearing House Association (NACHA), billers may now convert consumer checks that have been mailed to a lockbox into electronic ACH debits providing the biller has provided notice to the consumer. It is a difficult process to separate consumer checks from ineligible items, and, for consumer checks that are eligible for conversion, to correctly interpret and convert the on-us field of a Magnetic Ink Character Recognition (MICR) line into the correct format for an ACH debit. It has been found that, typically, items that are decisioned incorrectly, or parsed incorrectly, result in ACH administrative returns, wherein the returns simply state that the account number is invalid.

Currently there are three primary applications for electronic check conversion to ACH debits: re-presented check entries (RCK), point of sale (POS), and retail lockbox, or accounts receivable check truncation (ARC).

## **5 Identifying items eligible for ACH conversion.**

Only consumer checks are eligible for conversion to ACH debits. Therefore, there must be a method in place for separating such eligible conversion items from money orders, travelers checks, cashier's checks, convenience checks (credit card balance transfer checks), commercial checks, government items, and the like, which are ineligible for conversion.

### **Linking the MICR line with the Demand Deposit Account (DDA).**

15 Currently, there is no standard for how or where identifying numbers appear in the MICR lines of checks. The bank routing and transit number, although standardized, must be identified and captured within the MICR line. The check sequence number and account number must be identified, separated, and captured in the correct order. This is difficult not only because they may appear in various positions within the on-  
20 us fields of the MICR line but also because some financial institutions require a different account number for an ACH debit than they do for a check.

In the case of credit unions using payable-through banks for check processing, the routing/transit number on the check MICR line is that of the payable through bank.

25 The actual account number will likely contain a credit union identifier plus the account number. In order to convert a credit union payable-through draft to an ACH

transaction, the R/T number must be changed to that of the credit union, and the credit union identifier must be removed from the account number.

Solving such data parsing challenges greatly reduce exception items, improve collection rates, improve processing quality, and satisfy consumer payment posting expectations. $\pi$  involve electronic payments, as follows.

Carlson, Steven R. and Carlson, Paul R., *Point-Of-Sale Device Particularly Adapted For Processing Checks*, U.S. Patent Number 5,053,607 (October 1, 1991) disclose a check processing device that is particularly adapted for retailer/customer use at the point of sale through use of a MICR read head means, printer means and keypad means which feed information into a CPU which communicates, through an existing telecommunication system, with the customer's bank and the retailer's bank in order to transfer funds from the account of the customer to the account of the retailer.

Hills, Robert R. and Nichols, Henry R., *Checkwriting Point Of Sale System*, U.S. Patent Number 5,484,988 (January 16, 1996) disclose a point of sale system designed to read information from a consumer's check, credit card, or manual input with a subsequent debiting of a consumer's account and crediting a merchant's account for the goods or services provided. Point of sale terminals are designed to accept a form of credit card with a consumer's bank account information encoded thereon or in the alternative to read the MICR number from a consumer's check in order to verify that a consumer has an appropriate balance to conduct the transaction with a given merchant. Thereafter the transaction of that information is transmitted to a central computer system which verifies the consumer's credit worthiness and stores the transaction event information for subsequent bank

reconciliation via the ACH network. The invention eliminates the need for paper checks with all bank reconciliation being accomplished electronically.

Hills, Robert R. and Nichols, Henry R., *Checkwriting Point Of Sale System*, U.S.

- 5 Patent Number 6,164,528 (December 26, 2000); *Checkwriting Point Of Sale System*, U.S. Patent Number 6,283,366 (September 4, 2001) and *Checkwriting Point Of Sale System*, U.S. Patent Number 6,354,491 (March 12, 2002) disclose, in addition to the above summary, the disclosure includes fraud protection provisions such as velocity controls, social security checks, and scans. It claims to have the further flexibility to  
10 differentiate between "first time" consumer usage and those limits otherwise assigned to "known" consumer accounts. Additionally, there is not need for the system to retain the consumer's check after verification.

Weiner, S., Electronic Payments in the U.S. Economy: An Overview, Federal

- 15 Reserve Bank of Kansas City, Economic Review - Fourth Quarter 1999 discloses an overview of e-payments as they exist at that point in time in the U.S., including cash and check usage, credit and debit cards, wire transfers and ACH transactions, and e-money.

- 20 Curley, B, First Union Division Offers Check Processing At POS, Bank Systems + Technology, vol.36, no.5 p. 40 (May 1999) discusses First Union offering electronic check processing at the point of sale (POS), where consumer checks are scanned at the POS using a check reader, such as an IVI Checkmate unit, which sends the MICR data through a dial-up network to BankServ, a San Francisco-based check  
25 processor. BankServ compares the check information against negative databases like Deluxe's SCAN. The cashiers are notified within seconds if a check comes up

bad; otherwise, BankServ sends the item for payment via ACH. Consumers receive a canceled check back at the POS, except for the first time they use a check for payment, when it is retained as a source document for the bank.

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- 5 It would be advantageous to provide a system and method that ensures that every item eligible for ACH conversion is converted and collected successfully.

It would further be advantageous to eliminate administrative return processing resulting from the lack of MICR line standardization.

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It would further be advantageous to provide a system and method that provides an ACH directory of the tens of thousands of routing and transit (R/T) numbers which identifies which R/T numbers are eligible for conversion, the R/T number and account conversion parameters, the formats of the on-us MICR line, and the ability to  
15 correct originated transactions.

It would further be advantageous to store notifications of change that are sent by receiving financial institutions to update future originated transactions.

- 20 It would further be advantageous to design a complete administrative return processing technique that allows for correcting and re-originating items (repair and re-originate converted ACH transactions) on behalf of customers without having the customers work on the return and store the repaired transaction data to update future originated transactions.

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## **SUMMARY OF THE INVENTION**

A technique is provided for automatically converting checks to ACH debits. The process is a two-part process in which the MICR line in a check is read at the point the check is presented and a decision is made if the check can be converted to an ACH debit. The decision is made by applying various rules. If the system is unable to convert the check to an ACH debit, then the check is processed as a normal check. If a decision is made that the check can be processed as an ACH debit, then the MICR line is parsed for the financial institution which issues the check to create the ACH debit.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a schematic diagram showing the flow of the express check conversion process according to the invention.

## **DETAILED DESCRIPTION OF THE INVENTION**

A technique is provided for automatically converting checks to ACH debits. The process is a two-part process in which the MICR line in a check is read at the point the check is presented and a decision is made if the check can be converted to an ACH debit. The decision is made by applying various rules. If the system is unable to convert the check to an ACH debit, then the check is processed as a normal check. If a decision is made that the check can be processed as an ACH debit, then the MICR line is parsed for the financial institution which issues the check to create the ACH debit.

It should be appreciated that the terms truncate and convert, and their various forms are used herein interchangeably.

## 5 **Check to ACH Conversion Overview**

A preferred embodiment of the invention can be described by the following discussion of improvements to an existing check to ACH conversion process.

- 10 Customers (merchants, vendors, etc.) receive checks and other paper payment documents over the counter at retail point of sale or at a centralized lockbox location, deposit them, and wait up to 10 days for notification of returned items.

- Point of sale (POS) is a widely decentralized environment burdened by high  
15 employee turnover rates and multiple equipment deployments. Checks accepted over the counter are usually subject to verification or guarantee by check services providers. These providers verify only the likelihood that sufficient funds are in the account to cover the check at the time it is accepted at POS. Other ineligible items including money orders, travelers checks, etc. must be deposited rather than  
20 truncated.

- Retail lockbox is currently a two-pass environment. Check and other paper payments, each accompanied by a payment coupon, come into the lockbox and are run through high-speed sorting equipment. On the first pass, the mail is opened and  
25 information is captured from the check and coupon. On the second pass, checks are

power encoded in order to create a cash letter for deposit. Lockbox customers typically rush to meet deposit deadlines at their local depository financial institutions.

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### **A Preferred Process**

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A preferred embodiment of the invention provides a method and apparatus ensuring that ACH truncation (or conversion) works for customers from end to end. On the front end, software upgrades and conversion tables are provided to assist customers in identifying ineligible items and in correctly parsing check MICR line information.

10 On the back end, ongoing maintenance is provided as new returns appear and responsibility is taken for managing administrative returns.

In Federal Reserve Routing and Transit Number database, there are over 55,000 valid routing/transit numbers. Generally, about 28,000 of these are active. Of the  
15 28,000, approximately 26,000 accept ACH transactions. The claimed invention provides customers with the keys to parsing items successfully for ACH conversion. For items drawn on the approximately 2,000 financial institutions that do not accept ACH entries, the invention provides options to create and deposit drafts, thereby making a total electronic solution for customers.

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### **Conversion Solutions**

A preferred embodiment of the invention provides conversion solutions designed for use with all three ACH conversion applications, as follows. Refer to Fig. 2.

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**RCK.** Electronic check representment (RCK) deals with converting consumer checks that have been returned for non-sufficient funds (NSF) or uncollected funds into ACH debits. Acting as the customer's ACH Originating Depository Financial Institution (ODFI), and according to a preferred embodiment of the invention, the

5 financial institution receives the returns and applies conversion logic to truncate them into ACH debits. The preferred embodiment of the invention provides check truncation decision processing methodology, which provides updating with administrative return information allowing customers to collect payments successfully.

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**POS.** Ten billion to 20 billion checks are written at point of sale annually. In a preferred embodiment of the invention, in the POS application, conversion logic is applied when a check is presented for payment. At the retail location, the cashier scans the check then calls for authorization. The check truncation decision

15 processing logic resides on equipment at a centralized location rather than in the retail store. The cashier receives confirmation that the item can be converted to an ACH debit or, if it cannot, it must be deposited.

**ARC or Lockbox.** Approximately the same number of checks are mailed to

20 lockboxes, or placed in drop-boxes, as are written at point of sale. However, in these situations, high volumes of checks are concentrated in one location. From a technology deployment perspective, a great need for check conversion exists and, consequently, great benefits can be realized in a lockbox application.

25 In the preferred embodiment, check truncation decision processing logic is applied to identify ineligible items at two points in lockbox processing: 1) the mail opening

process where non-standard checks as well as money orders, travelers checks, and the like are identified and separated; and 2) at a first pass through data capture equipment control point when ineligible items should be pocketed as deposit vs. truncated items.

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Mail opening equipment uses basic Yes/No logic to detect inconsistencies in check sizes and in MICR lines lengths. Mail opening equipment does not look at R/T numbers or MICR line detail. To enable customers to identify items ineligible for ACH truncation, the invention provides software upgrades to make mail opening equipment smarter by outsourcing ineligible items. Then, check truncation decision processing is applied, such processing methodology developed and maintained by electronic check experts or expert system, for use in the information capture process to identify any ineligible items that are not caught in the mail sort. The processing information, which is programmed into the software that runs the equipment, is driven by a particular consumer's billing account number as well as the R/T number and account number from the check.

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The check truncation decision processing methodology also provides the logic for parsing routines needed to correctly obtain the appropriate routing and transit number, account number, and check serial number information needed to create a successful ACH transaction.

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### **Eliminating Administrative Returns**

Change is a fact of life. Consumers change payment behaviors from checks to money orders to online payment services whose payments arrive at lockboxes as

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commercial checks. Credit unions change payable-through banks. Credit card companies begin using different R/T numbers, and their convenience checks begin flowing through.

5 Just as antivirus software is updated continuously to identify and halt newly invented computer viruses, check truncation decision processing system is updated continuously to identify and convert new exception items. To provide customers with such ongoing maintenance, the preferred embodiment of the invention provides automated interfaces that notify and update customer platforms for new items as  
10 they appear.

Maintenance takes place on three levels. From highest to lowest, these are:

- Routing/Transit Number (Institutional Level)
- 15 • Routing/Transit Number and Account Number
- Consumer Billing ID (Consumer Level)

20 As customers encounter a new occurrence, the invention provides for taking the return item, examining the image, and determining what changes should preferably be made to re-originate the ACH transaction successfully. Thus, the burden of manual administrative return processing is off the hands of customers and any changes needed to be successful converting checks going forward are stored.

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**Benefits of Check Truncation Decision Processing Methodology**

Following are some benefits of the Check Truncation Decision Processing Methodology according to the invention.

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## **5 Operating Cost Reduction**

When checks are converted to ACH debits at the lockbox, the number of passes through equipment decreases from two to one and operating expenses are cut in half. Checks need make only one pass through the sorting machines during which  
10 all information needed to create an ACH transaction is captured. There is no need to power encode the eligible checks because they will be converted to ACH entries.

### **Accelerated Cash Flow**

15 Checks deposits are assigned same-day, one-day, or two-day funds availability, depending on their drawn-on banks. ACH debits receive next-day availability on all items.

### **Fraud Risk Reduction**

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ACH returns are received faster than check returns allowing the customer to apply risk and fraud avoidance technology in a timely manner. With checks, customers may not receive NSF detail for up to 10 days after the initial deposit. Credit card companies, for example, benefit from being able to quickly modify the amount of  
25 credit that will be extended to delinquent payers and charging late payment fees.

## **Simplified Reconciliation**

The need for exception research is virtually eliminated. Financial institutions, such as Wells Fargo, supports the redepositing of the transactions as well as the integrity of the returns, taking all returns and matching them to originated transactions to provide the best information possible about each return. With matching logic, customers receive the best possible return data. One preferred embodiment of the invention uses Wells Fargo's proprietary matching logic and matches 99.6% of the returns to the original items. Without value-added matching logic, it has been found that only 86% of returns have completely accurate transaction information.

## **Simplified Consumer Reconciliation**

The description of ACH payments on consumer account statements includes the name of the payee along with the check serial number, which does not appear when check payments are deposited. According to one embodiment of the invention, the correct check serial number is captured. Such capturing results in simplified account reconciliation for the consumer through less need for cross-referencing with check registers or duplicate checks copies, and fewer consumer payment inquiries.

## **Return Savings**

Return costs for a check are in the \$2 to \$10 range versus \$2 for an ACH item.

## **Redeposit Savings**

It costs 33% less to redeposit an ACH return item than a check return, approximately \$3 for a check vs. \$2 for an ACH transaction. This becomes even more significant when considering that, for many customers, re-presentment of low-value items was not cost-effective, so uncollected payments were simply written off. Now there is a cost-effective solution to represent low-value payments.

### **Increased Collections**

Traditionally, checks that are returned for non-sufficient funds (NSF) or uncollected funds may be re-presented for collection once, unless RCK services are used. A consumer check that has been converted to an ACH entry may be re-presented twice for a total of three presentments. Each presentment collects 30%-60% of outstanding items.

### **Eliminated Check Storage**

Prior to the March 15, 2002 NACHA rule amendments, converted checks had been treated as Uniform Commercial Code (UCC) items. UCC retention requirements mandated that these items be stored for seven years. During the pilot period, the requirements were that the original check be retained for 90 days and an image of the check for seven years. As of March 15, 2002, truncated checks are supposedly treated as Regulation E items. On such date, the storage requirement is eliminated and replaced with a forced destruction requirement which requires the destruction of the original source document within 14 days in order to prevent double depositing of paper and ACH items, and reducing operating expense.

## **Applicability to Other ACH Participants**

The check truncation decision processing conversion solutions are applicable to all

ACH conversion applications in which checks are used as the primary source

document and, therefore, to virtually all ACH participants that accept checks for consumer payments. These solutions will improve transaction clearing and posting for all ACH files. Companies billing recurring payments, particularly, will benefit from the provided information parsing keys as their files need the fewer updates and modifications over time.

## **Remittance Processing with Check Conversion**

This section describes Remittance Processing with Accounts Receivable Check Conversion, *i.e.* Express Check Conversion, according to one embodiment of the invention.

### **What is Check Conversion?**

Paper checks received from consumers in payment of an account receivable, such as a credit card account, are converted to an electronic debit. The paper check is imaged and destroyed. The consumer sees detailed payment information on his or her bank statement.

### **Check Conversion Process**

An embodiment of the invention is described with reference to Fig. 1, wherein Fig. 1 is a schematic diagram showing the flow of the express check conversion process.

In one embodiment of the invention, a company mails a statement to a consumer (102). The consumer receives the invoice and conversion notification (104). The

5 consumer mails a coupon with the corresponding check (106), on route to the remittance processing center. The consumer mail is delivered to the company or to its associated lockbox, where payments are received and processed (108). Then, the received and processed payments are sent to the company remittance processing center (110), which handles the following functionality:

- 10
  - Converting eligible consumer checks
  - Creating electronic file for converted items
  - 15
    - Depositing ineligible, paper checks at bank
    - Managing storage and retrieval of images

The associated financial institution handles the following (112):

- 20
  - ACH file processing and settlement
  - Account maintenance
  - 25
    - Returns handling

- Customer service

It should be appreciated that the company remittance site opening mail and processing payments for the company may be located at the company itself or at a third party site. Regardless, the company can decide with which financial institution it wants to deposit ineligible items. Such financial institution may be different than the ODFI. For example, while lockbox processing is done in Florida, it may be that Wells Fargo Bank is the ODFI for the ACH items. However, because Wells Fargo does not have any branches or vaults in Florida, the company can decide to deposit the ineligible items with a local Florida bank.

### **Remittance Processing Center**

The Remittance Processing Center provides the following functionality:

- Open envelope
- Image payment
- Determine payment amount
- Associate payment with customer account
- Determine if check is eligible for conversion

## **Eligible Items**

Eligible items include:

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- 5
- Consumer checks only
  - Such checks having a pre-printed serial number
  - Such checks completed and signed by consumer
- 10
- Such checks of any dollar value

## **Ineligible Items**

15 Ineligible items include:

- Corporate checks
  - Third party checks
- 20
- Credit card checks
  - Cashier's checks and money orders
- 25
- Government checks

- Checks payable in a foreign currency
  - Checks containing an auxiliary on-us field
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## 5 Sorting Criteria

Sorting criteria include:

- The Customer database:
  - Business customer
  - Opt out customer
- Size of check
  - 6" denotes a consumer check
  - Larger size usually denotes a business check
- Routing transit number on check
  - ACH acceptor or not
- Format of MICR line

- Existence of auxiliary on-us field

## **Sorting Function**

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5 Checks are sorted as follows:

- Eligible for conversion:
  - Add to "Perfect Parsing" file, described herein below.

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- Ineligible for conversion:
  - Deposit in bank.

## **15 Impact of Sorting Decision**

Following are described impacts of decisioning, as follows:

- Accurate decisioning is essential to success.
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- Inaccurate decisioning results in Administrative Returns:
    - The RDFI (receiving bank) is not able to process the ACH debit transaction.
- 25
- They return the transaction to the ODFI (originating bank).

- The ODFI returns it to the originating party for disposition (most likely, repair and re-origination)

## 5 Sample MICR formats

Two MICR myths include the following:

- Bank account information is easily identifiable
- Check serial numbers are easily identifiable

However, in reality, check conversion is complex, as can be inferred from the following sample MICR formats:

A211371078A 88 99999999C 5847

A324377516A999999999999 3C 4195

A121101037A6622D999999999C09

A231382306A 02 99999999C16 1712

A121000248A322 9999 999999C

A322079353A 9999999999C5283 10

A073901851A 999D999C10 0623

A121301028A-1234D9999C 2334

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## **Parsing the MICR Line**

The following information provides guidelines and constraints for parsing the MICR line:

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- The "On-Us" field of MICR line on a check contains 20 characters.

- ACH account format permits only 17 characters.

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- MICR may include a transaction ("TT") code which may or may not be a valid field for an ACH transaction.

- The placement of the account number, serial number, and transaction code in the MICR line is not standard across the banking industry.

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- ACH transactions may require adding or removing leading zeros in the account number.

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- Credit union share drafts often require R/T and account number reformatting to process as an ACH item.

## **MICR Parsing Options**

Some options for parsing are provided as follows:

- 5           • Using a provided Decisioning Table to make decisions, parse within a customer's remittance processing environment and create a NACHA formatted file; or
- 10           • Decision within the customer's remittance processing environment and create a "Perfect Parsing" data file and transmit to the financial institution facility for parsing via a Decisioning Table, such as an exemplary Decisioning Table described below; and
- 15           • Use a third party software Decisioning Table, such as U.S. Dataworks, and create a NACHA formatted file.

### **An Exemplary Decisioning Table**

An Exemplary Decisioning Table includes the following features:

- 20           • A database of bank R/T numbers and account number and MICR parsing formats.
- 25           • Daily, weekly, monthly analysis of all of a financial institution's ACH origination, return, NOC transaction data, including finding patterns.

- Means for Notifications of Change (NOCs) being automatically loaded and used to correct future originated transactions.

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## Using the Decisioning Table

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Some ways for using the Decisioning Table are provided as follows:

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- Install the financial institution facility's database in the customer's platform and use it to determine eligible and ineligible items. Then send the resulting data file to the financial institution's facility, which then parses the data and creates and processes a NACHA formatted file containing the customer's transactions.

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- Install the financial institution facility's database in the customer's platform and use it to determine eligible and ineligible items. Then, the customer sends the full MICR line, amount, and the customer reference number to the financial institution facility, which then performs enhanced modifications and corrections, such as adding or deleting leading zeros, and credit union conversion modifications, and the like, and as discussed in detail herein.

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- Use third party software, such as U.S. Dataworks, to convert items and send the resulting NACHA formatted file to the financial institution's facility for further processing, as described in detail herein below.

25 **Installing databases in customer's platform**

The following provides a way for successfully installing the decisioning table (database) in the customer's platform:

- Incorporate the database into the customer's software program to assist in determining which checks are eligible for conversion.
- Updating the database weekly or monthly from a transmitted file sent from the financial institution's facility to the customer.

#### **"Perfect Parsing" File**

Following is a way of creating and using the Perfect Parsing file:

- Capture the R/T number field, the on-us field, and determine the amount of checks eligible for conversion.
- Send the "Perfect Parsing" file to the financial institution without editing the transaction data.
- Let the financial institution parse the data, and:
  - Create and process a NACHA formatted file for eligible conversion items.

- Create paper drafts for ineligible items.

It should be appreciate that the resulting NACHA formatted file will have the lowest possible administrative return rate, because, among other things:

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1) the decisioning is correct; and

2) the back-end ACH formatting can be performed after the NACHA file is received.

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### **Third Party Software**

Following describes a way to incorporate third party software into the check conversion decisioning process:

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- It should be appreciated that the Decisioning Table can still add value to files already parsed by other's software.

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- The provided R/T data is more current than the data available from "official" bank tables, so R/Ts that are out-of-date can be corrected.

- The effectiveness of the provided Decisioning Table in correctly parsing account numbers is somewhat reduced because parsing eliminates some data from the MICR line that may otherwise be essential.

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- Leading zeros to account numbers are still added/removed, thereby reducing administrative returns.

- Credit union conversion modifications are provided.

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### **Process Flow - Ineligibles**

Following are guidelines provided for the ineligibles process flow:

- 10 • Power encode the ineligibles with the given dollar amount.
- Due to the lower volume of checks deposited, special sorting of checks may no longer be needed.
- 15 • Depending on the mix of business/consumer checks, decide possibly to deposit the checks without encoding the dollar amount.
- Deposit at bank.

### **20 Process Flow – Eligible Checks**

Following are guidelines provided for the eligibles process flow:

- 25 • Mark checks void on transport (optional).
- Confirm that images are readable.

- Transmit file to the financial institution for processing of ACH debits.

- Destroy checks that have been converted to ACH debits within a  
5 predetermined number of days, e.g. 14 days, of the settlement date.

### **An Exemplary Express Check Conversion Embodiment**

#### **10 Maintained Tables**

In a bank's directory, such as Wells Fargo Bank Directory, containing over 60,000 routing and transit numbers, the following is provided. The preferred table identifies: active versus retired R/T numbers, ACH participating R/T numbers, credit union  
15 conversion identification and translation information, check conversion eligibility flags, invalid account lengths, minimum and maximum account lengths, parsing format codes, and trim lead zero indicator.

MICR Translation Table. The table contains a list of masks for all of the possible  
20 MICR on-us field variations with the corresponding location of the account number and check serial number. Some masks are duplicated on the table with parsing format identifiers that match options available on the Bank Directory.

Transaction Management Database. This table stores all originated check  
25 conversion transactions and corresponding transaction modifications needed for

future transactions. The transaction modifications are a result of received notifications of change and administration (admin) return processing.

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## **Process Flow**

The financial institution facilitator provides initial and on-going files of ineligible R/T  
10 numbers to customers.

Customers utilize an ineligible R/T numbers list to sort checks into eligible and ineligible items. Ineligible items are encoded and deposited as checks. Due to the NACHA Rules, the customer also must identify checks containing an auxiliary on-us  
15 field as ineligible items.

For eligible items, customers format an Perfect Parsing file containing a record for each check. The file format consists of 9 byte R/T number, 20 byte MICR on-us field (including all spaces, dashes, and symbols), 10 byte dollar amount, and 22 byte  
20 client reference number.

The financial institution processes the Perfect Parsing file and creates a NACHA file of transactions for origination. Each record in the Perfect Parsing file is matched to a mask on the MICR Translation Table to identify the correct location of the account  
25 number and check serial number used for the NACHA formatted file. The parsing

format for each R/T number located on the Bank Directory is also used to identify which mask to be used in the case of duplicate masks.

5 An internal processing system is benchmarked at six million items in and out of the ACH warehouse per hour, which is needed to support the high volume of check conversion activity.

10 In addition to the creation of the NACHA file, items are automatically drafted as needed to collect items from R/T numbers that may have changed their ACH participation status after the customer had loaded their ineligible R/T numbers list.

Generally speaking, there are two reasons drafts are created for institutions:

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- 1) The institutions have changed their participation status; and
  - 2) The credit union conversion logic currently reflects that the credit union doesn't accept ACH. For example, if a payable through bank processes for 100 credit unions, all the sharedrafts will have the same payable through R/T number, but a few of the credit unions may not accept ACH.

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As the NACHA files are entered into the financial institution's ACH warehouse, the files are identified as either on-us items, or transit items. On-us items are distributed to the financial institution's posting application, and transit items are distributed to the ACH Operators for delivery to the appropriate receiving financial institutions.

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Several times during the day, the financial institution receives returns from originated electronic check transactions. Once per day, it processes all the returns, sorting and distributing the fatal return items to customers and preparing settlement. All Notifications of Change (NOC) are loaded into a Transaction Management

- 5 Database. Based on a pre-determined list of return reason codes, admin returns are also sorted and distributed to a Unix-based server for ACH operation staff to repair and re-initiate corrected entries (admin return processing).

10 The admin return processing system allows viewing all details of the original transaction and the return, for example, by a staff or expert system. Each return is matched to the original item to allow the ability to validate the return detail information. All of the transaction information, as well as an image of the check is used to repair the item. The following ability is provided:

- 15
- Correct and re-originate an ACH item
  - Correct and draft an item
  - Dishonor the ACH return
- 20
- Take a copy of the image to produce an image replacement document

All operator repairs are loaded into a Transaction Management Database to be used for future originated transactions, thereby eliminating future admin returns.

25 **MIS R porting**

To manage the on-going maintenance of the Bank Directory, ACH operations provides daily, weekly, and monthly reports produced which highlight origination detail and rates, return detail and rates, and admin return detail and rates, both by originating customer and by receiving financial institution.

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The Bank Directory is updated with a Federal Reserve ACH participant listing and by a Thomson directory for bank name, address, and contact information.

### **Exemplary NOC Logic**

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The preferred embodiment of the invention uses NOCs received for Check Conversion transactions to modify the (R/T)/Account/Transaction code for future Check Conversion Transactions, discussed as follows.

15 It should be appreciated that this NOC logic is only applied for valid NOCs received for check conversion transactions, such as any of: routing and transit number changes, account number changes, transaction code changes, and the like.

When a check conversion transaction is received from a check conversion customer,  
20 perform the following steps:

Apply the existing check conversion logic for modifying the  
(R/T)/account/check/transaction code number;

25 Check if a matching NOC was received in the NATBCCHG database. If there is a match, use the NOC information to set the R/T, Account, and Transaction code.

It should be appreciated that If the (R/T)/Account/Transaction code is modified because of a previously received NOC, write a record to the NOC FILE with "WFBDPN" in the descriptive date field to indicate the code was modified because of

5 a previous NOC. These are not written to the final NOC file used to send out NOCs, but are used to add a record to NATBCCHG. Therefore, if a RETURN or NOC is received later for a transaction because of a previous NOC, such RETURN or NOC appears on the new relevant report.

10 If returns are received for a transaction in which the RT/Account/Transaction code is modified because of a previous NOC, that NOC record is deleted from NATBCCHG so that future transactions for that RT/Account are not altered.

If a check conversion transaction was not received for thirteen months for a matching  
15 RT/Account, then such transaction from NATBCCHG is removed.

It should be appreciated that reports include all customer provided transaction detail in addition to the resulting NACHA formatted transaction detail.

20 It should be appreciated that the "CODE" is "N/A" when the account is modified from our check conversion logic but did not create an NOC. The "CODE" is "PN" when the (R/T)/account/transaction code is modified because of a previous NOC, but a new NOC is not sent.

It should be appreciated that the invention allows inquiries, updates, deletes, and adds to the NOC records in the NATBCCHG database to alter how the RT/Account/Transaction code is changed for check conversion transactions.

5 Below, Table K is an example NOC report according to the invention.

**Table K.**

```

10      REPORT H875-1          AUTOMATED CLEARING HOUSE          SYS DATE: MM/DD/YY
      LOCATION: XXXX          CHECK CONVERSION WFBD RETURNS      SYS TIME: HH:MM
      DATES: MM/DD/YY - MM/DD/YY          PAGE: XXXX

      CUSTOMER R/T/  CUSTOMER ACCT#/  CUSTOMER CK#/  CUSTOMER TRAN  RET/NOC
      ORIGINATED R/T ORIGINATED ACCT# ORIGINATED CK# ORIGINATED TRAN DATE    CODE    NOC INFO
15  -----
      XXXXXXXX  XXXXXXXXXXXXXXXXXXXX XXXXXX          XX    XXX
      XXXXXXXX  XXXXXXXXXXXXXXXXXXXX XXXXXX          XX  MM/DD/YY  XXXXXXXXXX

      XXXXXXXX  XXXXXXXXXXXXXXXXXXXX XXXXXX          XX    XXX
20  XXXXXXXX  XXXXXXXXXXXXXXXXXXXX XXXXXX          XX  MM/DD/YY  XXXXXXXXXX

      XXXXXXXX  XXXXXXXXXXXXXXXXXXXX XXXXXX          XX    XXX
      XXXXXXXX  XXXXXXXXXXXXXXXXXXXX XXXXXX          XX  MM/DD/YY  XXXXXXXXXX

25  TOTAL WFBD RETURNED ITEMS  XXXXXX

      ----- END OF REPORT -----

```

30

## **An Exemplary Express Check Conversion Design – Technical Requirements and Detailed Design**

### **Objective**

35

The objective of this endeavor is to enhance the support of Check Conversion transactions, effective with the NACHA 2002 release.

## **Background**

5

ARC transactions used for Check Conversion are part of the NACHA 2002 release on March 15, 2002. Not all checks are eligible for check conversion. In order to make better decisions up front on the eligibility, this embodiment of the invention allows maintaining information at the bank R/T level to determine whether the check is allowed in the check conversion process.

10

This database of check conversion decision information is made available to check conversion originators to allow better up front decisions in determining whether the truncate.

15

This embodiment of the invention also allows reporting on the volumes.

An Administrative Returns process allows correcting any check conversions that get returned by comparing the actual image to the check conversion transaction created.

20

It should be appreciated that in the industry, it is imperative that high speed processing be retained with check conversion. The preferred embodiment of the invention retains such high speed processing with check conversion because the invention provides a "thin" file of ineligible R/T numbers.

25

**Check Conversion Decision Database Requirements**

## TDB1 - Eligibility Indicator by R/T number

TDB1 is an eligibility indicator required for each R/T number to indicate whether the routing and transit number will accept truncated ACH items or MICR drafts.

TDB1 contains logic handling the case when even though an R/T number can accept ACH, it may not accept converted checks, and when this is the case, the R/T number is part of the ineligible R/T number file.

If the R/T number is not eligible, a reason code is maintained to indicate the reason that this R/T number does not accept the truncated ACH/MICR items.

## TDB2 - Ineligible Account Number Length

For R/T numbers that are eligible for truncated ACH and MICR items, an ineligible account number length is defined. Such allows setting a minimum account number length that is not valid for truncated ACH or MICR items. For example, if this value is set to 13, account numbers with a length 13 or more are not eligible for check conversion transactions. Lengths less than 12 are allowed.

## TDB3 - Minimum/Maximum Account Number Length

A minimum and maximum account number length can be specified for R/T numbers that accept check truncation transaction. There is a minimum and maximum account number length.

If the length of the account number received on a check conversion transaction is less than the minimum account length defined, then lead zeros are added to get to this minimum length.

5

If the length of the account number received on a check conversion transaction is greater than the maximum account length defined, then the account number is truncated to get to this maximum length.

- 10 Such minimum and maximum account number length fields are also used in conjunction with ineligible items' account length to determine whether or not to modify such account length or use the action code for the ineligible length.

#### TDB5 – Truncate Leading Zeros Indicator

15

An indicator at the R/T number level is provided to determine whether leading zeros should be truncated for this R/T number. If set to "Y", then leading zeros are truncated. However, if the truncated account length is less than the minimum account number length defined for this R/T number, then lead zeros are used to get to the minimum account number length.

20

#### TDB6 – Parsing Formats

A parsing format code is used to indicate how the MICR line of a check should be parsed for this R/T number. This code is needed by the originator facility that is doing the actual conversion.

25

Some sample formats are as follows:

00 – Unknown format

5

01 - \*R/T\*account number/ check serial number

02 - \*R/T\*check serial number account number

10

03 - \*R/T\*check serial number account number/account number (use numbers after on-us auxiliary field to create account number)

04 - \*R/T\*check serial number account number/account number (do not use numbers after on-us auxiliary field to create account number)

15

05 - \*R/T\*account number/account number check serial number (use numbers after on-us auxiliary field to create account number)

06 - \*R/T\*account number/account number check serial number (do not use numbers after on-us auxiliary field to create account number)

20

07 - \*R/T\*00000account number/ check serial number (various number of leading zeros before account number, use zeros to create account number)

08 - \*R/T\*00000account number/ check serial number (various number of leading zeros before account number, do not use zeros to create account number)

5 09 - \*R/T\*account number/check serial number (SPECIAL EDIT: If the check serial number is six digits, then the last two digits are stripped from the check number without a NOC)

10 10 - \*R/T\*account number/check serial number (SPECIAL EDIT: If the check serial number is 6 digits, then the first two digits are stripped from the check number without a NOC)

15 11 - \*R/T\*account number/check serial number (SPECIAL EDIT: If the check serial number is six digits, then the first two digits are stripped from the check number and placed at the end)

### **Check Conversion Decision Processing Requirements**

This section only addresses the technical design for requirements of a first phase.

20

TDB7 – Invalid Account Length Action Code

An action code for Invalid Account Length for instructing how to process transactions whose account length is greater than or equal to the Invalid Account Length. Such

25 Action Code can be "R" to reject the transaction or "D" to draft it via MICR.

## D sign Ov rview

See JCL section below for new JCL streams.

---

- 5 See Scheduling section below for Scheduling changes.

### Project Test Libraries

- The following TSO libraries are used to create and store all new JCL, Procs, and  
10 Control Cards needed for both unit testing and system testing.

#### JCL Library

TSTNA.#TEAMA.JCLLIB

15

#### Proc Library

TSTNA.\$PD3355A.PROCLIB

- 20 Control Card Library

TSTNA.\$PD3355A.CNTLCARD

#### Dataset Naming Conventions

25

Whenever possible, all datasets used for testing should follow the following dataset naming standards:

- All datasets beginning with TSTNA are test datasets.

5

- All datasets beginning with PRDNA are production datasets.
- An optional third qualifier may be added to identify the program or job that the dataset is created or used in.

10

- Productions dataset names follow naming standards defined in the ACH phase 2 standards document.

**JCL**

15

New JCL

**ZNACHKTB**

- 20 Such is a weekly job executed on Saturdays for executing PROC NACHKT to build the new generation of the Check Conversion Parameter File.

**ZNAD300A**

Such is a job to produce the Check Conversion Problem Report by R/T on a daily, weekly, and monthly basis. It executes proc NAD300. There are preferably three SCHID's: one for daily, one for weekly, and one for monthly.

---

5    ZNAD310A

Such job produces the Check Conversion Problem Report by File ID/Company ID on a daily, weekly, and monthly basis. It executes proc NAD310. There preferably are three SCHID's: one for daily, one for weekly, and one for monthly.

10

ZNAD320A

Such job produces the Check Conversion Detail R/T Report on a daily basis. It executes proc NAD320.

15

ZNAD330A

Such job produces the Check Conversion Detail File ID/Company ID Report on a daily basis. It executes proc NAD330.

20

ZNAS400C

Such is a monthly job to produce the Monthly Availability Report. It executes proc NAS400.

25

JCL Changes

## ZNAOA03A

Such job selects records from a preexisting NATBCPNY and builds a dataset to download information to UNIX. The LRECL=797 is increased on both job steps to accommodate the additional field added to the select. The LRECL=968 is increased by two to allow the delimiter (|).

## ZNAOA04A

10. Such job selects records from NATBFILS and builds a dataset to download information to UNIX. The LRECL=450 is increased on both job steps to accommodate the additional field added to the select. The LRECL=579 is increased by two for the new field and delimiter.

## 15 ZNAOA12A

Such job selects records from NA4VCMPPR and builds a dataset to download information to UNIX. The LRECLs preferably are changed to add the Credit Union Conversion and Check Conversion parameters.

20

## Scheduler

### New Scheduler Jobs

## 25 ZNACHKTB

This is a weekly job executed on Saturdays that executes PROC NACHKT to build the new generation of the Check Conversion Parameter File.

---

ZNAD300A

5

Such is a daily job to produce the Check Conversion Problem R/T Report

ZNAS400C

- 10 Such is a monthly job to produce the Monthly Availability Report for check conversion customers.

### **Procs**

- 15 New Procs

NACHKT

- Such PROC is used to execute the new program NAD0110 to build the new  
20 generation of the Check Conversion Parameter file.

NAD300

- Such PROC executes NAD0130 to produce the Check Conversion Problem R/T  
25 Report by RT.

NAD310

Such PROC execute NAD0310 to produce the Check Conversion Problem R/T  
Report by File ID/Company ID.

5

NAD320

Such PROC executes NAD0315 and NAD0320 to produce the Check Conversion  
Detail Report by R/T.

10

NAD330

Such PROC executes NAD0315 and NAD0330 to produce the Check Conversion  
Detail Report by File ID/Company ID.

15

NAS400

Such PROC executes NAS0400 to produce the Monthly Availability Report.

20 **Control Cards**

New Control Cards

NAD300S1

25

Such control card sorts records created by NAD315 for NAD300 by R/T to build the Check Conversion Problem Report by R/T.

---

#### NAD310S1

5

Such control card sorts records created by NAD315 for NAD310 by R/T to build the Check Conversion Problem Report by File ID/Company ID.

#### NAD320S1

10

Such control card sorts the records created by NAD315 for NAD320 by R/T to build the Check Conversion Detail Report by R/T.

#### NAD330S1

15

Such control card sorts the records created by NAD315 for NAD330 by FILE ID/Company ID to build the Check Conversion Detail Report by File ID/Company ID.

#### Control Card Changes

20

#### NANCCPNY

Such control card selects the NATBCPNY fields for sending to the UNIX. Add the new columns to the SELECT statement. Add FADMRT as the last select field.

25

#### NANDCPNY

Such control card has the output statements for building the NATBCPNY file to send to the UNIX. A new statement is added at the bottom for outputting the new FADMRT field:

5

NANDAH03

Such control card has the NDM statements for sending the NATBCPNY information to the UNIX. The LRECL increases from 968 to 969.

10

NANCFILS

Such control card selects the NATBFILS fields for sending to the UNIX. Add the new columns to the SELECT statement. Add FCTIND as the last select field.

15

NANDFILS

Such control card has the output statements for building the NATBFILS file to send to the UNIX. A new statement needs to be added at the bottom for outputting the new FCTIND field.

20

NANDAH04

Such control card has the NDM statements for sending the NATBFILS information to the UNIX. The LRECL increases from 579 to 580.

25

## NANCCMPR

Such control card selects the NA4VCPNY fields for sending to the UNIX. Add the new columns for Check Conversion. Send the credit union conversion fields.

5

Add CCTIND, QCTIAL, QCTMNL, QCTMXL, CCTPFM, FCTTLZ, CCTILA, CUIDPOS, CREDITUNID, IRTCCU, CUACCOUNTFLG, CRUNIONPRCS, CURTTFLG.

## 10 NANDCMPR

Such control card has the output statements for building the NA4VCMPR file to send to the UNIX. New statements are added at the bottom for outputting the additional fields CCTIND, QCTIAL, QCTMNL, QCTMXL, CCTPFM, FCTTLZ, CCTILA, CUIDPOS, CREDUTUNID, IRTCCU, CUACCOUNTFLG, CRUNIONPRCS, CURTTFLG.

15

## NANDAH12

20 Such control card has the NDM statements for sending the NA4VCMPR information to the UNIX. The LRECL increases for the new fields.

## NAG150CU

Such control card is used for selecting Credit Union NOCs from NAR562's NOCFILE. It is preferably modified for the C99 NOC's because neither FNOCA nor FNOCB are likely to be turned on. Select records with WFBD as the descriptor.

---

## 5 Files

### New Files

PRDNA.Z170001A.SCHKTPRM.R0008(0)

10

This is a GDG to contain the most recent copy of the Check Conversion Parameters defined by segment WY25. The last three generations preferably are kept.

Such file is built on a weekly basis with a new job.

15

## PacBase Elements

### New Elements

20 FCTIND

Check Conversion indicator, PIC X(1). Values of "Y" for Yes. All other values are NO.

25 CCTIND

Check Conversion indicator, PIC X(1). Values of "Y" for Yes. All other values are NO.

---

#### QCTMNL

5

Check Conversion minimum account length. PIC 9(2). Also create child QCTMNC with internal format 9(2) for putting it in an output file for the customer.

#### QCTMXL

10

Check Conversion maximum account length. PIC 9(2). Also create child QCTMXC with internal format 9(2) for putting it in an output file for the customer.

#### FCTTLZ

15

Check Conversion Truncate Lead Zeros indicator ,PIC X(1). Values of "Y" for Yes and "N" for No.

#### CCTPFM

20

Check Conversion Parsing Format, PIC 9(2). Also create child CCTPFC with internal format 9(2) for putting it in an output file for the customer.

#### QCTIAL

25

Check Conversion Invalid Account Length, PIC 9(2). Also create child QCTIAC with internal format 9(2) for putting it in an output file for the customer.

## CCTNOC

5

This is a code to indicate the reason why the account number was changed as a result of the Check Conversion parameters. Pic is X(1). Values:

SPACE = Not affected by check Conversion parameters

10

A = Changed due to MIN/MAX account length parameters

B = Changed due to Trim Lead Zero option

15

C = Forced to MICR because member bank does not process ACH

## FADMRT

Admin Returns Indicator, PIC X(1). Values of "Y" for Yes and "N" for No.

20

## CCTILA

Check Conversion Invalid Length Action Code, PIC X(1). Values of "R" to reject the item or "D" to draft using MICR.

25

## CDLYMO

Daily or Monthly indicator for report programs.

---

#### QCTMNX

5

Check Conversion minimum account length display. PIC 9(2). Also create child QCTMNC with internal format 9(2) for putting it in an output file for the customer.

#### QCTMXX

10

Check Conversion maximum account length display. PIC 9(2).

#### CCTPFX

15 Check Conversion Parsing Format Display, PIC 9(2).

#### QCTIAX

Check Conversion Invalid Account Length Display, PIC 9(2).

20

#### **PacBase Segments**

#### New Segments

25 WY25 – Check Conversion Parameter File

This is a new segment that defines the record layout of the Check Conversion Parameter File that is created on a weekly basis and sent to originators of Check Conversion Parameters.

---

5 The following elements preferably make up this file:

IRTC – Bank RT with Check Digit – PIC 9(9)

NBNK50 – Bank Name – PIC X(50).

10

CCTIND – Check Conversion Indicator (Y/N) – PIC X(1)

QCTIAL – Invalid Account Length – PIC 9(2)

15

QCTMNL – Minimum Account Length - PIC 9(2)

QCTMXL – Maximum Account Length – PIC 9(2)

FCTTLZ – Trim Lead Zeros Indicator – PIC X(1)

20

CCTPFM – Parsing Format Code – PIC 9(2)

CBKST – Bank Status PIC X(1)

25

FMSPL – ACH Member Status PIC X(1)

## WY27 – Report Program Parm Card

This is a new segment that defines the linkage section PARM card to be passed to the NAD300 and NAD310 report programs:

5

The following elements preferably make up this file:

IREG – Region

10 ILCTNX – Location

CDLYMO – Daily, Weekly, Monthly code

DFMTI – Overriding from date

15

DFMTI2 – Overriding to date

## WY29– Check Conversion Detail Report Work File

20 This is a new segment that defines the work file created by NAD315 to be used by report programs NAD320 and NAD330.

The following elements should make up this file:

25 CADNOC – Admin/NOC code

IRTC – R/T number with check digit

IACCT – Account number

---

5 IFILE – FILE ID

ICPNY – COMPANY ID

IIND – Individual ID (Has serial number

10

CTRANA – ACH transaction code

CRESR1 – Return/NOC 3 digit code

15 Segment Changes

GA20

This segment is for NATBCMPR and needs to have CCTIND, CCTRSN, QCTIAL,

20 QCTMNL, QCTMXL, FCTTLZ, CCTPFM, and CCTILA.

GA22

This segment is for NATBCMPR and needs to have CCTIND, CCTRSN, QCTIAL,

25 QCTMNL, QCTMXL, FCTTLZ, CCTPFM, and CCTILA. The –DBE entries should point to GA20. This is for NA1VCMPR.

## GA23

- This segment is for NATBCMPR and needs to have CCTIND, QCTIAL, QCTMNL,  
5 QCTMXL, FCTTLZ, CCTPFM, and CCTILA. The -DBE entries should point to  
GA20. This is for NA2VCMPR.

## GA24

- 10 This segment is for NATBCMPR and needs to have CCTIND, QCTIAL, QCTMNL,  
QCTMXL, FCTTLZ, CCTPFM, and CCTILA. The -DBE entries should point to  
GA20. This is or NA3VCMPR.

## GA25

- 15 This segment is for NATBCMPR and needs to have CCTIND, QCTIAL, QCTMNL,  
QCTMXL, FCTTLZ, CCTPFM, and CCTILA. The -DBE entries should point to  
GA20. This is NA4VCMPR.

## 20 AG00

- This segment is used for common control information. Currently it contains the NOC  
indicators for R/T change (FNOCA) and Account number change (FNOCB). At the  
bottom of this segment, add CCTNOC to contain the NOC Check Conversion  
25 indicator.

## GA5C

This segment is for NATBFILS and needs to have FCTIND added to the bottom.

---

## 5 GA5D

This segment is for NATVFILS and needs to have FCTIND added to the bottom and the -DBE to point to GA5C.

## 10 GA5A

This segment is for NATBCPNY and needs to have FADMRT added to the bottom.

## GA5B

15

This segment is for NATBCPNY and needs to have FADMRT added to the bottom and the -DBE to point to GA5A.

## DD1T

20

This segment is the audit log descriptions for GA5B and needs "ADM RETURN" added for a description.

## DF1T

25

This segment is the audit log values for GA5B and needs FADMRT added to the bottom.

---

WS38

5

This segment is for the NAC210 DB2 work area for the ACF setup report and needs FCTIND and FADMRT added to the bottom.

DD5D

10

This segment is the audit log descriptions for GA5D and needs "CHK TRUNC" added for a description.

DF5D

15

This segment is the audit log values for GA5D and needs FCTIND added to the bottom.

GA1J

20

This segment needs a key added for IRTVI to be used as a key for NAD300 Check Conversion report when reading NATVRHST.

DD2A

25

This segment is the audit log descriptions for GA23 and needs the Check Truncation fields added.

---

## DF2A

5

This segment is the audit log values for GA23 and needs the Check Truncation fields added.

## DB2

10

### New DB2 Tables

None.

15 DB2 Table Changes

### NATBCMPR – Bank File Directory

The new Check Conversion Database Decision fields that are based on the BANK  
20 R/T are kept in the Bank File Directory table. The following new rows are to be added to this table:

CCTIND – Check Conversion Indicator – X(1)

25 QCTIAL – Check Conversion Invalid Account Length – PIC S9(3) COMP-3

QCTMNL – Check Conversion Minimum Account Length – PIC S9(3) COMP-3

QCTMXL – Check Conversion Maximum Account Length – PIC S9(3) COMP-3

---

5      FCTTLZ – Check Conversion Truncate Lead Zeros Indicator – PIC X(1)

CCTPFM – Check Conversion Parsing Format – PIC 9(2)

CCTIALC – Check Conversion Invalid Account Length Action Code – PIC X(1)

10

Also update the views NA1VCMPR, NA2VCMPR, NA3VCMPR, and NA4VCMPR.

SPUFI to initialize table:

15      UPDATE NA001.NATBCMPR

SET CCTIND='Y',

QCTIAL=14,

QCTMNL=1,

QCTMXLL=13,

20      FCTTLZ='N',

CCTPFM=00,

CCTILA='D'

WHERE ACHMBRFLG = 'Y'

25      UPDATE NA001.NATBCMPR

SET CCTIND='M',

QCTIAL=1,

QCTMNL=0,

QCTMXLL=0,

FCTTLZ='N',

5 CCTPFM=00,

CCTILA='R'

WHERE ACHMBRFLG < 'Y'

NATBFILS – ACF File Level

10

A new Check Conversion indicator in the ACF at the File ID level is required to indicate this customer is a Check Conversion customer.

FCTIND – Check Conversion Indicator – X(1)

15

A SPUFI is used to initialize the value to "N".

Also update view NATVFILS.

20 NATBTFIL – ACF File Level

A new Check Conversion indicator in the ACF at the File ID level is required to indicate this customer is a Check Conversion customer

25 FCTIND – Check Conversion Indicator – X(1)

A SPUFI will be used to initialize the value to "N".

Also update view NATVTFIL.

---

5 NATBCPNY – ACF Company Level

A new Admin Returns indicator in the ACF at the Company ID level is required to indicate this customer is an Admin Returns customer

10 FADMRT – Admin Returns Indicator – X(1)

A SPUFI is used to initialize the value to "N".

Also update view NATVCPNY.

15

NATBTCPN – ACF Company Level

A new Admin Returns indicator in the ACF at the Company ID level is required to indicate this customer is an Admin Returns customer

20

FADMRT – Admin Returns Indicator – X(1)

A SPUFI is used to initialize the value to "N".

25 Also update view NATVTCPN.

## Batch Programs

### New Batch Programs

---

#### 5 NAD120 – Build Check Conversion Parameter file

This is a new program to read through the Bank File Directory (NATBCMPR) and build a file of the Check Conversion Parameters. The output segment is WY25 and it builds the plus-one generation of a new GDG

10 PRDNA.Z170001A.SCHKTPRM.R0008.

#### NAD300 – Check Conversion Problem Report by R/T

This is a new program to print out a Check Conversion Problem Report by R/T. It is  
15 printed on a DAILY, WEEKLY, and MONTHLY basis called by three separate jobs.

The returns and NOCs for ARC, POP, XCK, and RCK transactions are processed by this report to provide the number of returns and NOCs for each R/T.

20 Pacbase RT1 is used to produce this report.

#### NAD310 – Check Conversion Problem Report by File ID/Company ID

This is a new program to print out a Check Conversion Problem Report by File  
25 ID/Company ID. It is printed on a DAILY, WEEKLY, and MONTHLY basis called by three separate jobs.

The returns and NOCs for ARC, POP, XCK, and RCK transactions are processed by this report to provide the number of returns and NOCs for each R/T.

---

5 Pacbase RT2 is used to produce this report.

#### NAD315 – Check Conversion Detail File Builder

10 This is a new program to extract the return/NOC information to build a file that can be sorted for the Detail Reports created by NAD320 and NAD330.

#### NAD320 – Check Conversion Detail Report by R/T

15 This is a new program to print out a Check Conversion Detail Report by R/T. It is printed on a DAILY basis.

Pacbase RT3 is used to produce this report.

#### NAD330 – Check Conversion Detail Report by File ID/Company ID

20

This is a new program to print out a Check Conversion Detail Report by File ID/Company ID. It is printed on a DAILY basis.

Pacbase RT4 is used to produce this report.

25

#### NAS400 – Monthly Available Report

This is a new program to create the Monthly Availability Report. A new monthly availability report by ACH COLD is created for check conversion customers. The fields on the report include processing date, processing time, total items, total dollars, RDFI, item count, and availability (0=sameday, 1=next day, 2=2 day).

The schedule log (SCHL) is used to read the information needed for this report.

#### Batch Program Changes

##### CEACH018 – MICR Drafts

This program is modified to include the check number on MICR DRAFTS for check Conversion transactions. This is for the DEBIT transactions.

At L070864, if this is not a credit transaction and are processing a Check Conversion transaction (SAVESEC=ARC, RCK, XCK, or POP), move the check number (MCR967) from the '6' record to 1(R11) to be immediately after the '/'. Ignore lead zeros.

Below MCR953 there is an unlabeled CL3 statement. Put a tag "MCRSEC" on this line to reference the standard entry class code.

Also add a storage field CL3 called "SAVESEC" to save the standard entry class. At tag ST004 after it is verified it is a '5' record, save the entry class by moving MCRSEC to SAVESEC.

It will be necessary to shift the amount to the right to allow for the extra check number positions. Shift it to the right 8 positions.

- 5 Also, the 15 digit TRACE for ARC, RCK, XCK, and POP transactions should use the 15 digit TRACE from the '6' record, not calculated.

#### NAR560 – EDIT

- 10 This program is modified to check if this is a debit ARC, RCK, or POP transaction. If so, it preferably calls NAR562 to verify against the Check Conversion Parameters if the originator is set up for Check Conversion (FI00-CCTIND='Y').

#### NAR562 – MICR Split Edit

15

The new Check Conversion logic preferably is only applied when the originator's FILE ID ACF setup has the check Conversion indicator set to "Y".

- 20 This program is modified to look at the Check Conversion parameters in the NA4VCMPPR view that is retrieved by this program. Check to see if the account number must be changed due to the MIN/MAX account number length parameters and the TRIM LEAD 0 indicator. If it must be changed, then a NOC is created.

- 25 In 98GS, if this is a Check Conversion NOC from an original request (not a return), set AG51-DDESC to "" rather than "WFBD".

Reject ARC, RCK, XCK, and POP transactions that have a check serial number with more than 5 digits. Need reject reason code.

---

#### NAD100 – Thomson File Update

5

This program is modified to set the default values for the Check Conversion parameters in the Bank File Directory when new bank records are inserted during the Thomson File Update. The insert at P92GI needs to include the new fields for Check Conversion parameters.

10

At P60BD, it adds a non-ACH bank. Set up the default check Conversion parameters.

CCTIND='M',

15 QCTIAL=1,

QCTMNL=0,

QCTMXLL=0,

FCTTLZ='N',

CCTPFM=00,

20 CCTILA='R'

Also update the INSERT at 92GI to include the Check Conversion fields.

#### NAD101 – Fed File Update

25

This program is modified to set the default values for the Check Conversion parameters in the Bank File Directory when new bank records are inserted during the Fed File Update. The insert at P92GI needs to include the new fields for Check Conversion parameters.

5

At P62CR, set up the default values based on FMSPL which indicates whether this is an ACH bank. If the value of CR00-FMSPL is "Y", set up the following:

```

    CCTIND='Y',
10    QCTIAL=14,
    QCTMNL=1,
    QCTMXLL=13,
    FCTTLZ='N',
    CCTPFM=00,
15    CCTILA='D'
```

Otherwise, set them up to not allow check Conversion:

```

    FCTIND='M',
20    QCTIAL=1,
    QCTMNL=0,
    QCTMXLL=0,
    FCTTLZ='N',
    CCTPFM=00,
25    CCTILA='R'
```

If a R/T is being changed to non-ACH MEMBER at 58KD, set the CCTIND to 'M' to not allow check Conversion but to convert it to MICR.

If the R/T is set to ACH MEMBER at 60AP, set up the default Check Conversion parameters to allow check Conversion.

#### NAG150 – NOC report

This program is modified to identify NOCS as a result of Check Conversion. A new code C99 is used when it was forced to MICR because the member bank does not process ACH Check Conversion transaction.

If this NOC was a result of the Check Conversion parameters, the correct reason code needs to be printed on the report.

At P32BB, add the following reason codes:

C99 - Forced to MICR because member bank does not process ACH Check Conversion transactions. Look for AG51-DDESC = "WFBDM".

Also besides looking for DDESC = "NORWST", look for "WFBDM" which is used for Check Conversion NOCs.

Admin Returns process is to put "ADMIN" in this description field for NOCs created as a result of the Admin Returns process correcting the bank/account.

## NAI405 – Prophet ACF/OCF Read

This program is modified to set up a base charge for companies in which the FCHKTR indicator is set to “Y” at the FILE-ID level in NATVFILS.

5

This program is modified to set up a base charge for companies in which the FADMRT indicator is set to “Y” at the COMPANY ID level in NATVCPNY.

Look at FDELET indicator.

10

## NAH720 - Monthly Return Reason Analysis Report

This program is modified for changes to the Monthly Return Reason Analysis Report for the ADMIN NOCS, new C99 NOC code, and the Check Conversion Decision Rejects.

15

## NAC110 – ACF Delete

This program is modified for the ACF Delete to add FCTIND and FADMRT to the logs.

20

## NAC120 – ACF Copy Test to Production

This program is modified for the ACF Copy Test to Production to include FADMRT and FCTIND.

25

## NAC210 – ACF Setup Report.

This program is modified to add FADMRT and FCTIND to the ACF Setup Report.

---

### 5 NAH400 – Returns Statistics

This program is modified to identify DDESC='WFBD' as an ON US NOC. Where NORWST is being looked at in P30BJ, also look for WFBD.

### 10 NAH700 – Returns Extract.

This program is modified to also look for WFBD where it looks for NORWST.

### Batch Program Recompiles

15

NAC121

NAR540

20

NAR550

NAR590

NAR591

25

NAR592

NAR599

NAR600

---

5

## **Report Programs**

### **New Report Programs**

#### **10 RT1 – Check Conversion Problem Report by R/T**

This Pacbase report program is used by the new program NAD300 to produce the Check Conversion Problem Report by R/T.

#### **15 RT2 – Check Conversion Problem Report by File ID/Company ID**

This Pacbase report program is used by the new program NAD310 to produce the Check Conversion Problem Report by File ID/Company ID.

#### **20 RT3 – Check Conversion Detail Report by R/T**

This Pacbase report program is used by the new program NAD320 to produce the Check Conversion Problem Detail Report by R/T.

#### **25 RT4 – Check Conversion Detail Report by File ID/Company ID**

This Pacbase report program is used by the new program NAD330 to produce the Check Conversion Problem Detail Report by File ID/Company ID.

---

#### RHN – Monthly Return Analysis

5

This program provides customers with their overall origination and return summary information, including return rates, redeposit rates, administrative return rates, and the like.

#### 10 Report Program Changes

##### RHQ – Return Reason Analysis Summary

15 This report is modified to add the number of admin returns, admin NOCs, and deposit adjustment returns.

##### RHN– Return Reason Analysis Reports

20 This report is for the Return Reason Analysis Report and is modified for the new lines to print.

##### RC6– ACF Setup Report

25 This report is modified to print the new CHECK CONVERSION and ADMIN RETURNS indicators which are now part of the ACF setup.

## RDF – Fed File Update Report

This report is modified to print the BEFORE/AFTER values of any Check Truncation fields that change as a result of the update.

5

Also display the Check Truncation data for each RT updated on this report.

### Online Programs

#### 10 New Online Programs

None.

#### Online Program Changes

15

NAD006

This program is modified to add new Check Conversion Database fields to the detail screen for the Bank Directory File.

20

NAC062

This program is modified to add new Check Conversion indicator at the File ID level of the ACF screen NA62. This indicator should be set to "Y" or "N".

25

Also, do not allow CHK TRUNC to be set to "Y" if MICR SPLIT or CU CONVERSION is set to "N".

#### NAC063

5

This program is changed to initialize the FADMRT option for RETURNS when an add is being done. Add this to P29MA by setting CPNY-FADMRT to "N".

#### NAC066

10

This program is modified to add new Admin Returns indicator at the Company ID level of the ACF screen NA66. This indicator should be set to "Y" or "N".

### Exemplary Report Layouts

15

#### New Report Layouts

The following tables show examples of new report layouts according to a preferred embodiment of the invention.

20

**Table A. D300-1 Check Conversion Problem RT Report by RT**

REPORT ID: D300-1 FN	AUTOMATED CLEARING HOUSE	SYS DATE: MM/DD/YY
LOCATION: 0000	CHECK CONVERSION PROBLEM	SYS TIME: HH:MM
DATES: MM/DD/YY - MM/DD/YY	R/T REPORT	PAGE: XXXX

25

BANK R/T	ADMIN RETURNS	OTHER RETURNS	PERCENT	NOC
XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX%	XXX,XXX,XXX
XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX%	XXX,XXX,XXX
XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX%	XXX,XXX,XXX
XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX%	XXX,XXX,XXX

30

XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX%	XXX,XXX,XXX
XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX%	XXX,XXX,XXX
XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX%	XXX,XXX,XXX
XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX%	XXX,XXX,XXX

5

TOTAL	XXX,XXX,XXX	XXX,XXX,XXX	XX%	XXX,XXX,XXX
-------	-------------	-------------	-----	-------------

Admin returns = R03, R04, R12, R13, R20

Percent = Admin Returns / (Admin Returns + Other Returns)

10

TO WSF2

ADHOC INQUIRIES FROM HISTORY SERVER

## Table B. D310-1 Check Conversion Problem RT Report by File Id/Company ID

REPORT ID: D310-1 FN	AUTOMATED CLEARING HOUSE	SYS DATE: MM/DD/YY
LOCATION: 0000	CHECK CONVERSION PROBLEM	SYS TIME: HH:MM
DATES: MM/DD/YY - MM/DD/YY	FILE/COMPANY ID REPORT	PAGE: XXXX

15

FILE ID	COMPANY ID	ADMIN RETURNS	OTHER RETURNS	PERCENT	NOC
=====	=====	=====	=====	=====	=====
XXXXXXXXXX	XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX	XXX,XXX,XXX
XXXXXXXXXX	XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX	XXX,XXX,XXX
XXXXXXXXXX	XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX	XXX,XXX,XXX

20

FILE TOTAL		XXX,XXX,XXX	XXX,XXX,XXX	XX	XXX,XXX,XXX
------------	--	-------------	-------------	----	-------------

25

XXXXXXXXXX	XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX	XXX,XXX,XXX
XXXXXXXXXX	XXXXXXXXXX	XXX,XXX,XXX	XXX,XXX,XXX	XX	XXX,XXX,XXX

FILE TOTAL		XXX,XXX,XXX	XXX,XXX,XXX	XX	XXX,XXX,XXX
------------	--	-------------	-------------	----	-------------

30

TOTAL OF ALL FILES		XXX,XXX,XXX	XXX,XXX,XXX	XX	XXX,XXX,XXX
--------------------	--	-------------	-------------	----	-------------

Select FILE ID's with FCTIND = Y

35

## Table C. D320-1 Check Conversion Detail Report

REPORT ID: D320-1 FN	AUTOMATED CLEARING HOUSE	SYS DATE: MM/DD/YY
LOCATION: 0000	CHECK CONVERSION DETAIL	SYS TIME: HH:MM
DATE: MM/DD/YY	R/T REPORT	PAGE: XXXX

40

BANK R/T	ACCOUNT #	SERIAL#	TC	CODE TYPE	NOC INFORMATION
=====	=====	=====	=====	=====	=====
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R03 ADMIN	
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R03 ADMIN	
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R04 ADMIN	
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R12 ADMIN	
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R12 ADMIN	

45

XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R20 ADMIN
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R20 ADMIN

TOTAL ADMIN RETURNS            XXX,XXX,XXX

5

XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R01 NON-ADMIN
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R08 NON-ADMIN
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R08 NON-ADMIN
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R09 NON-ADMIN
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R10 NON-ADMIN

10

TOTAL NON-ADMIN RETURNS        XXX,XXX,XXX

XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C01 NOC	XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C01 NOC	XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C02 NOC	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C04 NOC	XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C04 NOC	XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C05 NOC	XX
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C06 NOC	XXXXXXXXXXXXXXXXXXXX XX
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C07 NOC	XXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XX
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C09 NOC	XXXXXXXXXXXXXXXXXXXX

20

TOTAL NOC                    XXX,XXX,XXX

25

BANK R/T	ACCOUNT #	SERIAL#	TC	CODE TYPE	NOC INFORMATION
=====	=====	=====	---	=====	=====
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R13 ADMIN	
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R13 ADMIN	

30

TOTAL ADMIN RETURNS            XXX,XXX,XXX

TOTAL NON-ADMIN RETURNS        XXX,XXX,XXX

35

TOTAL NOC                    XXX,XXX,XXX

### Table D. D330-1 Check Conversion Detail File/Company ID Report

REPORT ID: D330-1 FN	AUTOMATED CLEARING HOUSE	SYS DATE: MM/DD/YY
LOCATION: 0000	CHECK CONVERSION DETAIL	SYS TIME: HH:MM
DATE: MM/DD/YY	FILE/COMPANY ID REPORT	PAGE: XXXX

40

FILE ID        XXXXXXXXXXXX  
COMPANY ID    XXXXXXXXXXXX

45

BANK R/T	ACCOUNT #	SERIAL#	TC	CODE TYPE	NOC INFORMATION
=====	=====	=====	---	=====	=====
XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R03 ADMIN	

5	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R04 ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R13 ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R04 ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R12 ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R20 ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R13 ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R13 ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R12 ADMIN	
10	TOTAL ADMIN RETURNS		XXX,XXX,XXX			
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R01 NON-ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R09 NON-ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R07 NON-ADMIN	
15	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R08 NON-ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R10 NON-ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R01 NON-ADMIN	
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	R10 NON-ADMIN	
20	TOTAL NON-ADMIN RETURNS		XXX,XXX,XXX			
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C01 NOC	XXXXXXXXXXXXXXXXXXXX
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C01 NOC	XXXXXXXXXXXXXXXXXXXX
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C02 NOC	XXXXXXXXXX
25	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C04 NOC	XXXXXXXXXXXXXXXXXXXX
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C04 NOC	XXXXXXXXXXXXXXXXXXXX
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C05 NOC	XX
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C06 NOC	XXXXXXXXXXXXXXXXXXXX XX
	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C07 NOC	XXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XX
30	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXX	XX	C09 NOC	XXXXXXXXXXXXXXXXXXXX
	TOTAL NOC		XXX,XXX,XXX			

### Table E. S400-1 Monthly Availability Report

35 Align date/time to the right

REPORT ID:	D130-1 FN	AUTOMATED CLEARING HOUSE SYS DATE:	MM/DD/YY
LOCATION:	0001	CHECK CONVERSION MONTHLY AVAILABILITY REPORT SYS TIME:	HH:MM
COMPANY:	XXXXXXXXXX	DATES:	XX/XX/XX - XX/XX/XX PAGE: XXXX

  

PROCESSING DATE	PROCESSING TIME	TOTAL ITEMS	TOTAL DOLLARS	ITEM RFDI	COUNT	DOLLARS	AVAILABILITY
=====	=====	=====	=====	=====	=====	=====	=====
MM/DD/YY	HH:MM XX	XXX,XXX,XXX	XXXXXXXXXX	XXX,XXX,XXX			X
			XXX,XXX,XXX,XXX.XX			XXX,XXX,XXX,XXX.XX	
COMPANY TOTAL		XXX,XXX,XXX		XXX,XXX,XXX		XXX,XXX,XXX,XXX.XX	
			XXX,XXX,XXX,XXX.XX			XXX,XXX,XXX,XXX.XX	

## Report Layout Changes

### Tabl F. Monthly Return Analysis R port

ORIG BANK

091000019  
WELLS FARGO MINNESOTA, NATIONA  
6TH ST & MARQUETTE AVE  
MINNEAPOLIS MN 55479

JANE SMITH  
ABC COMPANY  
123 A STREET

SMALLVILLE CA 95123

FILE ID: A123456789

REPORT H123-N FN AUTOMATED CLEARING HOUSE SYS DATE: 01/02/02

PAGE 1 MONTHLY RETURN REASON ANALYSIS REPORT SYS TIME: 04:56

ACH ANALYSIS FOR 12/01

ORIG BANK R/T: 456000123

ORIG BANK NAME: WELLS FARGO , NATIONAL ASSOCIATION

COMPANY ID: A12345678

COMPANY NAME: XXXXX

FILE ID: A429483498

FILE NAME: ABC COMPANY

PRODUCT: OTHER CONSUMER COLL

FAX1: 1-(123) 123-4567 ATTN: JANE SMITH

FAX2: 1-(456) 321-7654 ATTN: CAROL JACOB

ACTIVITY	ITEMS/PCNT	DOLLARS/PCNT	0-5 DAYS	6-10 DAYS	>10 DAYS
ORIGINATED	7,178 100.0%	XX,YYY.DD 100.0%			

#### RETURNED

R01: INSUF FUND	12 9.5%	XXX.XX 8.9%	12	0	0
R02: ACCT CLSED	8 6.3%	XXX.XX 6.3%	8	0	0
R03: NO ACCOUNT	77 61.1%	XXX.XX 62.0%	77	0	0
R04: INV ACCT	27 21.4%	XXX.XX 21.5%	27	0	0
R07: REVOKED	1 0.7%	XX.XX 0.7%	1	0	0
R13: RFI INVAL	1 0.7%	X.XX 0.4%	1	0	0

TOTAL	126 100.0%	Y,YYY.YY 100.0%	126	0	0
-------	------------	-----------------	-----	---	---

#### REDEPOSITED 1ST REPRESENTMENT

R01: INSUF FUND	9 100.0%	XXX.XX 100.0%
-----------------	----------	---------------

#### REDEPOSITED 2ND REPRESENTMENT

R01: INSUF FUND 1 100.0% XX.XX 100.0%

TOTAL 10 100.0% XXX.XX 100.0%

5 RETIRED REDEPOSIT

R01: INSUF FUND 4 66.6% XX.XX 60.6%

R02: ACCT CLSED 2 33.3% XX.XX 39.3%

TOTAL 6 100.0% XX.XX 100.0%

10

NOTIFICATION OF CHANGE

C01: ACCOUNT NO 10 58.8% XXX.XX 60.4% 10 0 0

C02: R/T NUMBER 4 23.5% XX.XX 20.6% 3 1 0

C03: R/T & ACCT 3 17.6% XX.XX 18.9% 2 1 0

15

C99: CHKT MICR 0 0.0% 0.00 0.0% 0 0 0

ADM: ADMIN NOCS 0 0.0% 0.00 0.0% 0 0 0

TOTAL 17 100.0% 197.75 100.0% 15 2 0

20

CHECK CONVERSION XX XXX.X%

ADMIN RETURNS

CHECK CONVERSION DECISION REJECTS

??? : REJECTED 4 100.0% XX.XX 100.0%

25

TOTAL 4 100.0% XX.XX 100.0%

REPORT H220-Q FN AUTOMATED CLEARING HOUSE SYS DATE: 01/02/02

PAGE 2 RETURN REASON ANALYSIS - SUMMARY REPORT SYS TIME: 04:56

ANALYSIS FOR 12/01

30

ORIG BANK R/T: 123456789

ORIG BANK NAME: WELLS FARGO, NATIONAL ASSOCIATION

COMPANY ID: A123456789

COMPANY NAME: ABC COMPANY

FILE ID: A123456789

35

FILE NAME: ABC COMPANY

PRODUCT: OTHER CONSUMER COLL

1ST REDEPOSIT WINDOW: 4

2ND REDEPOSIT WINDOW: 3

FAX1: 1-(123) 123-4567 ATTN: JANE SMITH

40

FAX2: 1-(321) 321-7654 ATTN: CAROL JACOB

COMPANY RESULTS INDUSTRY COMPARISON

NO. OF DOLLAR ENTRIES ORIGINATED: X,XXX

45

% OF ACH ENTRIES: 100.00% 99.4%

% OF PAC ENTRIES 0.00% 0.6%

% OF ENTRIES RETURNED: X.XX% 1.8%

NO. OF ACH DOLLAR RETURNS: XXX

% OF RETURNS DISHONORED: 0.00% 0.3%

50

NO. OF ACH PRENOTE RETURNS: 0

	% OF PRENOTE RETURNS:	0.00%	1.7%
	NO. OF ACH RETURNS 1ST REDEPOSIT:	X	
	% OF ACH REDPOSITS COLLECTED:	25.00%	52.7%
	NO. OF ACH RETURNS 2ND REDEPOSIT:	1	
5	% OF ACH REDPOSITS COLLECTED:	25.00%	52.7%
	NO. OF NOCS RECEIVED:	17	
	% OF NOCS REFUSED:	0.00%	0.8%
	CHECK CONVERSION ADMIN RETURNS		
	NO. OF CHECK TRUNC DECISION REJECTS	4	
10	% OF REJECTS	100.00%	

**Table G. D101F – Fed File Update**

FEDERAL TAPE:XYZ BANK DIRECTORY MONTHLY UPDATE

15	ACTION.....: xxxxxx	LAST CHNG.: 06/30/88	UPDATE SRC: F
	ROUTE/TRAN.: xxxxxxxx	BANK NAME.: XYZ BANK - MIDDLE TOWN	
		ACH MEMBER: Y	BANK STAT.: A
		ACH MBR DT: 07/01/91	STAT DATE.: 07/01/91
		SURV R/T...:	INST TYPE.: 01
20	RT/ FRAC....: xxxxxxxxxxxx	FED R/T....: 091000080	
	BANK ADDR...: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx		
	CITY.....: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx		
	STATE.....: xx	ZIP CODE...: xxxxx xxxx	
	PHONE NBR...: (xxx) xxx-xxxx		
25	THOM RETIRE: xx/xx/xx	FED RETR...: xx/xx/xx	
	CHECK TRUNC: X	INV LENGTH: XX	INV LENGTH ACTION: X
	MIN LENGTH.: XX	MAX LENGTH: XX	PARSE FORMAT ....: XX
	TRIM LEAD 0: X		

**Exemplary Online Screens**

The following tables show sample online screens according to one embodiment of the invention.

**Table H. NA06 – Bank Directory Detail**

35	NA06	WELLS FARGO BANK DIRECTORY DETAIL	02/21/02 11:06
			LAST CHNG.: 02/16/99
	ACTION.....:	(A-ADD, C-CHANGE)	CHANGED BY: MAINELSO
			UPDATE SRC:
	ROUTE/TRAN: 091000XXX	SURVIVE RT: 0	BANK STAT.: A
40	RTE SYMBOL: OXX	ACH MEMBER: Y	STAT DATE.: 04/18/92
	R/T FRAC...: 01XXXXXXXXXX	ACH MBR DT: 05/12/89	ASSOC NAME:
	BANK ABA...: XXXXXX	ACH CONTCT:	

CU ID POS.: CU ID.....: CU PROCESR: 00000000  
 CU R/T FLG: CU ACT FLG: CU PROCESS:  
 CHK TRUNC : X LEGNTH INV: XX ACT: X MIN: XX MAX: XX FORMAT: XX TRIM LEAD 0: X

5 BANK NAME.: XYZ BANK MINNESOTA, NATIONAL ASSOCIATION  
 STREET ADR: ZZZZZZZZZZZZZZZZZZ  
 CITY.....: XXXXXXX

10 STATE.....: XX ZIP CODE...: 12345 PHONE NBR.: (321) 123-4567  
 MBR OVRD...: OVRD DATE.: THOMP RETR: / 0/ FED RETIRE: / 0/  
 REASON:  
 INDMNTY RQ: PRENOTE RQ:  
 SPEC INSTR:

15 NEXT TRAN: INPUT: 5003 PF:

Table I. NA62 – ACF File ID Level

NA62 ACF FILE SETUP 02/20/02 10:23  
 LAST CHNG.: 01/24/02

25 ACTION.....: (A=ADD, C=CHG, D=DEL) DELETE FLG: CHANGED BY:  
 REGION CDE: 0X MULT CPNY.: MULT BTCH.:  
 LOCATION...: 0000 CUST SPRT: 0000 SHORT NAME:  
 FILE ID....: FILE OWNER:  
 ADDR 1ST...: CIS UPDATE: N CISABA:  
 ADDR 2ND...: CIS DDA...:  
 CITY.....: STATE: ZIP:

30 DELIV METH: 0 NWCNOT.....: ORIG TRACE: MVS APPLID:  
 ORIG TYPE.: TXMT TYPE.: MOD OVERLY: USER ID...: XXXXXXXX  
 MICR SPLIT: CU CNVRSN.: R/T ACCT...: R/T ACCT #: 0  
 MICR SPRT: MICR SETL.: FILE SETL.: BATCH REPT: N CHK TRUNC: X

35 CPNY REP...: WORK: ( ) - HOME: (999) 999-9999  
 RISK REP...: WORK: ( ) - HOME: (999) 999-9999  
 AFTER HRS1: UNKNOWN WORK: (999) 999-9999 HOME:  
 AFTER HRS2: WORK: HOME:  
 CSMGT REP.: WORK: HOME:

40 ACCT OFFCR WORK: ( ) - RISK: SCHD:

PF5 CPNY\BATCH, PF7 PREV FILE, PF8 NEXT FILE, PF11 RISK\COMM, PF12 SCHEDULE

NEXT SCREEN: 4723 PF:

Table J. NA66 – ACF C mpany ID L vel

NA66		ACF RECEIVED RETURNS		03/07/02 16:45	
ACTION....:		(C=CHG)	DELETE FLG:	LAST CHNG.:	
REGION CDE:		LOCATION...:	RPTG ABA...:	CHANGED BY:	
FILE ID....:		FILE OWNER:		SHORT NAME:	
COMPANY ID:		COMPANY....:			
RTN ATTN...:		RTN CO:			
RTN ADD1...:					
RTN ADD2...:					
RTN CITY...:		RTN STATE..:	ZIP CODE...:		
FLOAT BYP...:		ADM RETURN: X			
BYPASS R/T:		BYPASS ACT..:	ACCT TYPE..:		
RTN R\T....:		RTN ACCT...:	ACCT TYPE..:		
RDPST CDE..:		RDPST LOW..:	RDPST HIGH:		
RDPST NBR..:		RDPST HIST:	RDPST WIND:		
DISH CODE..:		DISH LOW...:	DISH HIGH..:		
UNTIMELY...:		REPAIR FLG:	TAPE RET...:		
RTN MEDIA..:		RTN ANALY..:	RTN SRT OPT..:	COMP EXIT..:	
GEN INSTR.:					
INVALID VALUE FOR THE FIELD LAST CHANGE DATE					
NEXT SCREEN:				PF:	

Accordingly, although the invention has been described in detail with reference to particular preferred embodiments, persons possessing ordinary skill in the art to which this invention pertains will appreciate that various modifications and enhancements may be made without departing from the spirit and scope of the claims that follow.